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ductory discussion of insect classification.[3] She has divided her work into thirty-one chapters, the first five of which deal with the external structures of insects and their transformations. Then the orders and suborders are taken up in regular sequence, and their characters clearly and concisely defined. We are glad to learn that the author intends to have these "Outlines" published in book form for school purposes.

Recent Bulletins.—Mr. F. M. Webster begins his work at the Ohio station by a timely discussion of the Wheat Midge, *Diplosis tritici* (Bulletin, Vol. IV., No. 5, September, 1891). This pest has appeared in Central Ohio in considerable numbers.——Professor F. J. Niswander discusses plant lice in a five-page Bulletin (No. 2) issued by the Wyoming station in August.——In Bulletin No 3 of the New Mexico station Professor C. H. Tyler Townsend discusses a number of fruit insects.——In the report of the Maine station for 1890 Professor F. L. Harvey gives a popular account of a number of injurious insects which have attracted attention during the year.——Professor J. B. Smith's account of his year's work in the 1890 report the New Jersey station contains many results of great practical value.

MICROSCOPY.[1]

Methods of Preserving Human Embryos.—It frequently happens that human embryos which come into my possession are almost ruined by the physician's carelessness in preserving the material. For instance, I have obtained specimens simply placed in water, a solution of policylic acid, strong alcohol, or simply packed in cotton or even forced into a small bottle. Any of these methods almost totally spoil the specimen for careful study.

An abundance of material comes into the hands of the physician, and through his kindness it becomes possible to throw as much light on human embryology as on that of any of the other mammals. During the last few years several embryologists, especially Prof. His, have not only added a great deal to our knowledge of human embryology, but to vertebrate embryology in general, by the careful study of a few human embryos. Only a glance at the new edition of Quain's "Anatomy" will convince any one of this fact.

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[3] Outlines of Entomology. Prepared for the use of farmers and horticulturists. By Mary E. Murtfeldt. Report of the Missouri State Horticultural Society for 1890. Also issued separately, pp. 130, Figs. 48.

[1] Edited by C. O. Whitman, Clark University.

Of a dozen human embryos, less than six months old, which have come into my possession during the last few years, only one has been found well preserved and suited for careful study. For this reason I address this note especially to those who in the future will be kind enough to send me material.

In cases of early abortion the physician that attends pays no attention whatever to the embryo, or only preserves it carelessly in alcohol. Often it is impossible to find the embryo within the blood and particles which are extruded. If in all these cases the suspected material were, without previous examination, placed simply in seventy per cent. alcohol, most valuable specimens would often be obtained. When the ovum comes away unruptured, it nearly always ruins the specimen to examine it. It should be placed at once in a large quantity of Müller's fluid, or in alcohol. If these are not at hand the ovum should be kept temporarily in a large open-mouthed bottle until the hardening fluid can be obtained. The specimen, even if not opened, can be injured very easily by handling or by wrapping it with cotton or cloth. In all these cases it is not advisable to throw injured specimens away, for poor material is of value for dissection, and certainly is better than none at all.

Gynecologists, who are more especially interested in this subject, frequently have beautiful collections of specimens, and are by no means inclined to part with them. Yet the advancement of embryology has shown that it is necessary to destroy, or rather to lay into sections, the embryos before they can be studied properly. After a good specimen is once sectioned, the whole embryo or any part of it can be modeled quite easily on a large scale. This is necessary before the parts can be studied properly, and it requires a great deal of time and a considerable amount of costly apparatus. For this reason the embryologist feels justified in asking the gynecologist to part with his highly prized material.

Those physicians who have small laboratories, and are acquainted with the ordinary technique of hardening, should by all means harden specimens in Perenyi's chromonitric acid, in Kleinenberg's alcoholic picrosulphuric acid, in ten per cent. nitric acid, or in saturated solution of corrosive sublimate. Others who are not familiar with the above technique should use Müller's fluid or seventy per cent. alcohol. The latter is in general the best, and an amount of the alcohol equal to at least five times the volume of the specimen should be used. When a specimen is to be transported by mail or express it should be transferred to a smaller bottle of alcohol of the same strength, and a very small *loose* cotton plug placed both above and below it.—F. MALL, *Clark University.*

PROCEEDINGS OF SCIENTIFIC SOCIETIES.

The National Academy of Sciences met in New York at Columbia College from November 10th to 12th, inclusive. The following papers were read: Some Aspects of Australian Vegetation; G. L. Goodale. The Nomenclature of Vegetable Histology; G. L. Goodale. On Certain New Methods and Results in Optics; Charles S. Hastings. An Exhibition of the New Pendulum Apparatus of the U. S. Coast and Geodetic Survey, with Some Results of Its Use; T. C. Mendenhall. On the Use of a Free Pendulum as a Time Standard; T. C. Mendenhall. On Degenerate Types of Scapula, and Pelvic Arches in the Lacertilla; E. D. Cope. The Proteids or Albuminoids of the Oat-Kernel (second paper); Thomas B. Osborne. Astronomical Methods of Determining the Curvature of Space; C. S. Peirce. On Geographical Variation Among North American Birds, Considered in Relation to the Peculiar Intergradation of *Colaptes auratus* and *C. cafer;* J. A. Allen. On the Variation of Latitude; S. C. Chandler. The Tertiary Rhynchitidæ of the United States; Samuel H. Scudder. On a Color System; O. N. Rood. Preliminary Notice of the Reduction of Rutherfurd's Photographs; J. K. Rees. On the Application of Spectrum Analysis to the Analysis of the Rare Earths, and a New Method for the Preparation of Pure Yttrium; H. A. Rowland. A Nomenclator of the Families of Fishes; Theodore Gill. Measurement of Jupiter's Satellites by Interference; A. A. Michelson. The Follicle Cells of Salpa; W. K. Brooks. The academy was entertained on the evening of the 10th by President Low, of Columbia College; and on that of the 11th by Mrs. Henry Draper. A part of the latter entertainment consisted of an illustrated lecture by Prof. E. C. Pickering on the work of the Draper memorial fund in astronomical research in South America.

Biological Society of Washington.—*October 17th.*—The following communications were made: Food Plants of the Indians of the Death Valley Region; Frederick V. Coville. Notes on Paleopathol-